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ABSTRACT

This collection of essays examines the history and impact of computers in mathematics and mathematics education from the early, computer-assisted instruction efforts through LOGO, the constructivist educational software for K-9 schools developed in the 1980s, to MAPLE, the computer algebra system for mathematical problem solving developed in the 1990s, for the university, to Web-based calculus courses in the new millennium. Essays include: (1) "Mathematics, the Computer, and the Impact on Mathematics Education" (D. James Tooke); (2) "Computers, Statistics, and the Culture of University Mathematics Education" (Cleborne D. Maddux); (3) "Online Calculus: The Course and Survey Results" (G. Donald Allen); (4) "Changing Mathematics Teaching through Web-Based Professional Development" (Paul G. Shotsberger); (5) "The Role of Computers in Mathematics Teaching and Learning" (Lynda R. Wiest); (6) "CAS Applied in a Functional Perspective College Algebra Curriculum" (Robert Mayes); (7) "Factors Influencing Success in Intermediate Algebra" (Larry J. Stephens and John Konvalina); (8) "A Learning Model That Stimulates Geometric Thinking through Use of PCLogo and Geometer's Sketchpad" (Leping Liu and Rhoda Cummings); (9) "Shape Makers: A Computer Environment That Engenders Students' Construction of Geometric Ideas and Reasoning" (Michael T. Battista); (10) "Teaching and Learning with Dynamic Geometry Programs in Student-Centered Learning Environments: A Mixed Method Inquiry" (Robert D. Hannafin and Barry N. Scott); (11) "Actions on Objects: A Metaphor for Technology-Enhanced Mathematics Instruction" (Michael L. Connell); and (12) "Pre-Service Teachers' Use of Computer Simulation To Explore Probability" (Sharon Dugdale). (MM)

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